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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/706,222	11/12/2003	Raghubir Singh Bhullar	9793/139	6315

7590 04/20/2007  
Lawrence A. Steward, Esq.  
BRINKS HOFER GILSON & LIONE  
Suite 1600  
One Indiana Square  
Indianapolis, IN 46204

EXAMINER
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OLSEN, KAJ K

ART UNIT	PAPER NUMBER
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1753

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/20/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/706,222

Applicant(s)

BHULLAR ET AL.

Examiner

Kaj K. Olsen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-4 and 12-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 12-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                                                                                  |                                                                                         |
|--------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                                                      | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                                             | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>11-12-03;2-27-04;5-2-05</u> . | 6) <input type="checkbox"/> Other: ____.                                                |

## DETAILED ACTION

### *Specification*

1. The disclosure is objected to because of the following informalities: Applicant's amendment to the specification on 11/12/2003, should be amended to state that the application number has matured into patent 6,676,815 on 1-13-2004.

Appropriate correction is required.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 3, 4, 12, 16, 17, and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by GB 869,226 (hereafter "GB '226").

4. With respect to claims 1, 3, and 4, GB '226 discloses a method for making an electrode containing cell comprising forming a cylindrical body of dielectric material (insulating material 19) with a rod of electrically conductive material (carbon rod 10) embedded therein and passing through the cylinder in a direction perpendicular to the longitudinal axis of the cylinder, removing via drilling dielectric material and electrically conductive material to form a chamber 20 concentric with the longitudinal axis, wherein the size and location of the chamber are such that the rod of electrically conductive material is divided by a gap. See fig. 1-4 and p. 2, ll. 34-

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99. With respect to GB '226 constructing an electrochemical cell, this merely constitutes the eventual intended use of the device and does not further define the method of making of the cell.

5. With respect to claim 12 (those limitations not covered above), GB '226 teaches an embodiment of molding the body with the electrically conductive rod within it. See p. 2, ll. 54-

63. With respect to the channel being formed being a "capillary channel", absent a particular dimension for this capillary channel, the unspecified dimensions of GB '226 would be deemed to meet this limitation.

6. With respect to partially forming the capillary channel while molding the body, GB '226 teaches the presence of a short post 13 that is placed within the mold prior to the molding of the body. See fig. 1 and p. 2, ll. 34-53.

7. With respect to claim 20, although GB '226 does not anticipate method claim 18 from which claim 20 depends, claim 20 is a product-by-process claim. MPEP 2113 stipulates that "product-by-process claims are not limited to the manipulations of the recited steps, only the structure implied by the steps". The structure implied by the steps of the process would appear to be a capillary channel with electrodes formed on each side of the channel. Claim 19 further defines that the process can include separating the cells so the cells of claim 20 need not even include the plurality of capillary channels of claim 18, but could consist of merely one capillary channel.

8. Claims 17 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Marsoner et al (USP 5,130,009).

9. With respect to claims 17 and 20, although Marsoner does not anticipate method claims 12 and 18 from which claims 17 and 20 depend, claims 17 and 20 are product-by-process claims.

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MPEP 2113 stipulates that “product-by-process claims are not limited to the manipulations of the recited steps, only the structure implied by the steps”. The structure implied by the steps of the process would appear to be a capillary channel with electrodes formed on each side of the channel, which Marsoner teaches. See electrodes 15 and 23 along each side of capillary channel 5 of fig. 1. In addition, claim 19 further defines that the process can include separating the cells so the cells of claim 20 need not even include the plurality of capillary channels of claim 18, but could consist of merely one capillary channel.

10. Claims 17 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 2-30764 Y (hereafter “JP ‘764”).

11. With respect to claims 17 and 20, although JP ‘764 does not anticipate method claims 12 and 18 from which claims 17 and 20 depend, claims 17 and 20 are product-by-process claims.

MPEP 2113 stipulates that “product-by-process claims are not limited to the manipulations of the recited steps, only the structure implied by the steps”. The structure implied by the steps of the process would appear to be a capillary channel with electrodes formed on each side of the channel, which JP ‘764 teaches. See electrodes 1 and 2 along each side of capillary channel 8 of fig. 2. In addition, claim 19 further defines that the process can include separating the cells so the cells of claim 20 need not even include the plurality of capillary channels of claim 18, but could consist of merely one capillary channel.

12. Claims 17 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Zare et al (USP 5,223,114).

13. With respect to claims 17 and 20, although Zare does not anticipate method claims 12 and 18 from which claims 17 and 20 depend, claims 17 and 20 are product-by-process claims.

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MPEP 2113 stipulates that “product-by-process claims are not limited to the manipulations of the recited steps, only the structure implied by the steps”. The structure implied by the steps of the process would appear to be a capillary channel with electrodes formed on each side of the channel, which Zare teaches. See electrodes 21 and 22 along each side of capillary channel 10. In addition, claim 19 further defines that the process can include separating the cells so the cells of claim 20 need not even include the plurality of capillary channels of claim 18, but could consist of merely one capillary channel.

*Claim Rejections - 35 USC § 103*

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. Claims 2, 15, 18, and 19 (and claim 20 in the alternative) are rejected under 35 U.S.C. 103(a) as being unpatentable over GB ‘226 in view of Sauer et al (USP 5,395,504).

16. With respect to claims 2, 15, 18, and 19, GB ‘226 set forth all the limitations, but did not explicitly recite the formation of a plurality of chambers or capillary channels. However, it is well known in the manufacturing art that a plurality of sensor elements can be constructed simultaneously to reduce manufacturing costs. In particular, Sauer teaches that a plurality of sensor elements can be constructed simultaneously and that the individual sensors can be separated from each other at a later time. See col. 6, ll. 3-22. It would have been obvious to one of ordinary skill in the art at the time the invention was being made to utilize the teaching of

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Sauer for the method of GB '226 so that multiple cell bodies can be molded at the same time thereby reducing manufacturing costs. With respect to each chamber dividing the rod or removing the rod from each capillary channel, it is noted that the claims do not explicitly state that the rod in each of these chambers or capillary channels is a common rod and that the claims currently read on the mere duplication of the process of GB '226. However, even if the examiner were to interpret claims 2, 15, and 18 as requiring a common rod for each of these chambers, it is noted that Sauer discloses that a common electrode material can be utilized for all of all of the various measurement chambers and the individual sensor elements can be later differentiated by merely cutting the common conductive member. See fig. 1, 4 and 10.

17. With respect to claim 20 in the alternative, the examiner did not need for GB '226 to possess the limitations of claim 18 to read on claim 20 (see MPEP 2113 and the discussion above). However, even if the examiner were to interpret claim 20 as requiring the explicit method steps of claim 18, then claim 20 would be further obvious over the teachings of GB '226 and Sauer as discussed above.

18. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over GB '226 in view of Rogers (USP 3,635,681).

19. GB '226 set forth all the limitations of the claim, but did not explicitly recite the addition of a reagent to the channel of the flow cell. However, it is well known in the art of conductivity measurement to include reagents in the flow cell. In particular, Rogers teaches the addition of reagents via a matrix to the electrodes such that the conductivity sensor's response can be tailored to the particular constituents of interest. See col. 2, ll. 15-35. It would have been obvious to one of ordinary skill in the art at the time the invention was being made to utilize the

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teaching of Rogers for the method of GB '226 such that the conductivity response for the flow cell can be specific for the chemical system being analyzed.

20. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over GB '226 in view of Rogers and Wohlstadler et al (USP 6,207,369).

21. GB '226 and Rogers were utilized to address the deposition of a reagent above, but these references did not explicitly suggest the use of capillary action for depositing the reagent.

Wohlstadler teaches that capillary action is a conventional manner of depositing reagents within flow cells. See col. 7, ll. 25-31 and col. 53, l. 64 through col. 54, l. 6. It would have been obvious to one of ordinary skill in the art at the time the invention was being made to utilize the teaching of Wohlstadler for the method of GB '226 and Rogers because the use of standard means for depositing reagents requires only routine skill in the art. In addition, capillary action is passive and wouldn't require the addition of a pump source.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kaj Olsen whose telephone number is (571) 272-1344. The examiner can normally be reached on Monday through Friday from 8:00 A.M. to 4:30 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen, can be reached on 571-272-1342. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications



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may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AU 1753  
April 18, 2007



**KAJ K. OLSEN**  
**PRIMARY EXAMINER**